Unique Identification and Asset Tracking

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Agenda

- Introduction
- UID Policy Overview
- What is UID?
- DataMatrix
- JSLIST Suit Inventory Control

UID Applicability

- Components or parts valued over $5,000.00
- Serialized
- Controlled Item
- Mission Essential
- Pilferable

*Note: List is not all inclusive

Directive Actions- Dept of Defense

- Under Secretary of Defense AT&L - Unique Identification (UID) mandatory on all new solicitations.
  - Advance Policy Issued Dec 02
  - First IPT Meeting held on 12 Feb 03
  - Industry participated
  - Policy Issued 29 Jul 03
  - Policy update 03 Sept 04

UID Milestones

- UID Required for all solicitations starting 1/1/04
- UID Required for GFE starting 1/1/05
- CAE’s/PM’s encouraged to begin implementing on legacy systems now.

UID Drivers

- CFO Act 1990
- Inventory Control/Asset Management
- Accountability DoD and Contractors
- Up Time/Counterfeiting
- Strategic Importance(supplies to warfighters)
- Reliable and Timely Reporting
- Audit Trail

Marking Requirements

- Remain readable throughout product life (thru retirement and destruction)
- Withstand all environmental conditions that the product will be exposed to under normal operation
- Provide no detrimental effects on the functionality, reliability, or durability of the product

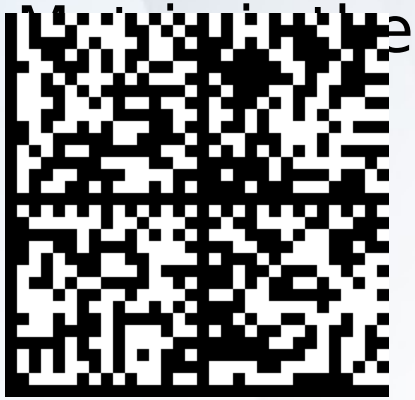
What is UID?

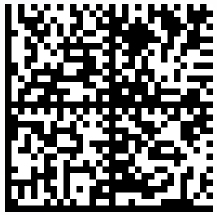
- UID is a new globally unique "part identifier" containing data elements used to track DoD parts through their life cycle.
- UID Data is encoded into Data Matrix symbols that are applied to parts using Direct Part Marking processes (DPM).

What is a Data Matrix Symbol?

- Machine-readable symbol capable of storing large amounts of information within a small physical area

- Data Matrix is the standard for direct part marking





2-D Data Matrix vs. 1-D Bar Code

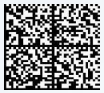
Bar Codes *1-D One Dimensional*

A1B2C3D4E5

This bar code contains only 10 characters

- Encodes information in one dimension
- Requires high-contrast; usually 80% &
- Limited scalability
- Used for packaging + non-permanent labels

The Data Matrix *2-D Two Dimensional*

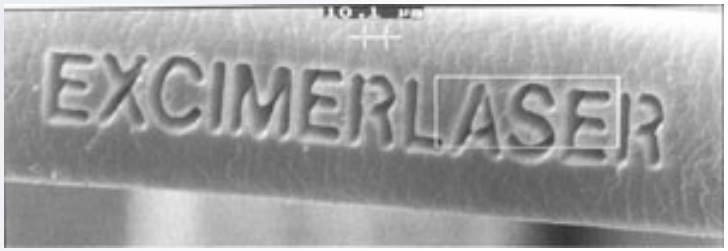


A 52 mm Data Matrix (approx. 3/10th of an inch) can contain 400 characters of information

- Both height & width are used
- Works with contrast as low as 20%
- Readable within 360 degrees
- Holds more data within smaller space
- Can be read when up to 20%+ damag

Scalability of Data Matrix Symbology

Data Matrix symbol on the head of a straight pin



Words cut into a human hair using an Excimer Laser

The Four Major Marking Methods

Laser Marking

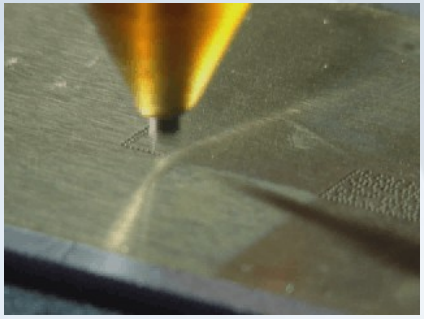
Ink Jet Marking

Dot Peen Marking

Electro-Chem Etch Marking

DoD Mobile Marking Cart (NCMS Deliverable, 1 of 3 Versions)

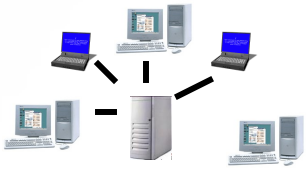
Communication



Dot peen mark being made on part
RVSI verifier measures quality of mark

RVSI reader decodes symbol

Information sent to host computer

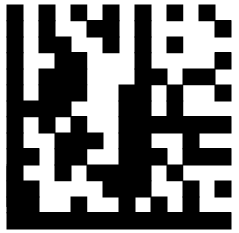


Information sent to world

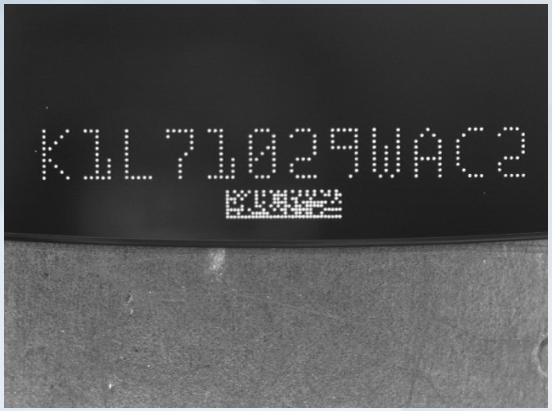
Flexibility of Data Matrix Symbology

These marks are readable Data Matrix symbols marked on a feather without damaging the feather.

Advantages of Data Matrix Symbol

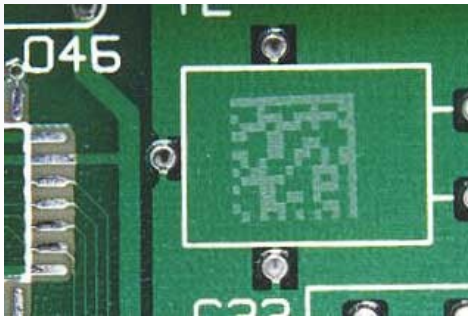
- Marking methods that can perform in the harshest environment
- Lose up to 20%+ of the symbol and recover 100% of encoded data
- Size is only limited by fidelity of marker
- Symbol can hold an order of magnitude more than a linear bar code
- Decode Data Matrix symbol invisible to human eye
- Not language dependent
- Only needs minir 20% e(or 

Existing Data Matrix Applications

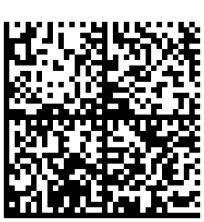


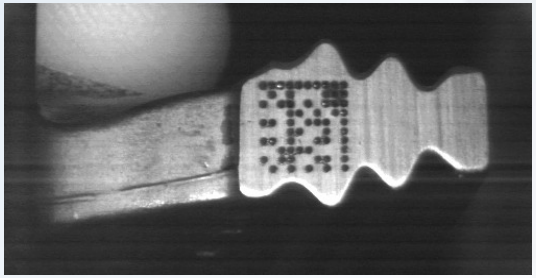
Semiconductor – Wafer

Government – Postage

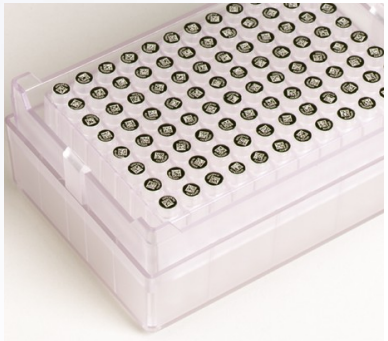


Electronics – PCB

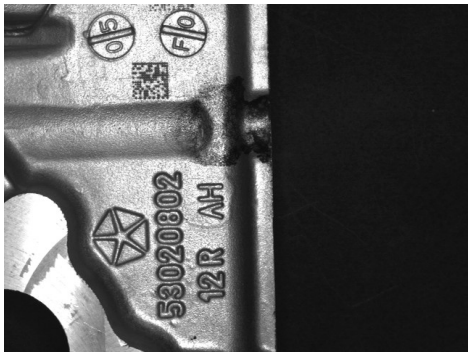




Aircraft – Turbine Blade



Pharmaceutical – Vials



Automotive – Engine Componer

Why Implement UID ?

- Improves Force Readiness
- Unique serial number tracking of assets
- Supports configuration management
- Deters unauthorized parts u
- Reduces life-cycle costs
- Reduces man hours
- Reduces human error
- Improves resource utilizatio
- Increases process control

2-D Data Matrix symbology represents the next generation of automatic identification

JSLIST Suit Factors

- Five year shelf life
- Total life of 15 years
- May only be laundered three times
- Must be inspected
- Suit shortages are projected

Contact Information

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www.uidsupport.com